



## **NATIONAL OCCUPATIONAL RESEARCH AGENDA (NORA)**

10/20/2009 REVISION

### **NATIONAL WHOLESALE AND RETAIL TRADE AGENDA**

FOR OCCUPATIONAL SAFETY AND HEALTH RESEARCH AND PRACTICE IN THE  
U.S. WHOLESALE AND RETAIL TRADE SECTOR

Developed by the NORA Wholesale and Retail Trade Sector Council

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## INTRODUCTION

### **NORA: Keeping Workers Healthy through Partnerships**

The National Occupational Research Agenda (NORA) is a partnership program to stimulate innovative research and improved workplace practices. Unveiled in 1996, NORA has become a research framework for NIOSH and the nation. Diverse parties collaborate to identify the most critical issues in workplace safety and health. Partners work together to develop goals and objectives for addressing these needs.

The program entered its second decade in 2006 with a new sector-based structure to better move research to practice within workplaces. There are eight separate sectors involved in NORA. The eight NORA-defined sectors are: Agriculture, Forestry and Fishing; Construction; Healthcare and Social Assistance; Manufacturing; Mining; Services; Transportation, Warehousing and Utilities; and Wholesale and Retail Trade. NIOSH is the steward of NORA and facilitates the work of the multi-stakeholder NORA Sector Councils, which will develop and implement research agendas for the occupational safety and health community over the decade (2006-2016). The NORA Wholesale and Retail Trade Sector Council is the group that has been working to develop the agenda for wholesale and retail trade.

### **Wholesale and Retail Trade Agenda: Rationale**

This is the first national effort to create an agenda to focus national attention on the health and well being of those workers, who are vital to our economy, i.e., the 21 million workers who are employed in the 1.6 million businesses that comprise the wholesale and retail trade sector (WRT). The WRT sector consists of the 146 sub-sectors formed from the NAICS 2002 coding (<http://www.census.gov/epcd/naics02/naicod02.htm>); i.e., the wholesale trade sector (Sector 42), and the retail trade sector (Sector 44 - 45).

This national WRT agenda is intended to address the question: “What information is needed to be more effective in preventing injuries and illnesses in the wholesale and retail trade sector?” The agenda consists of six strategic goals designed to address the top safety and health concerns within the wholesale and retail trade sector. The agenda foundation is based on research needs and information gaps that must be filled in order to make progress on important wholesale and retail trade safety and health issues. The agenda is not restricted to research alone, but also includes public health practice projects, and a new focus on translating research findings into usable tools and information that can be used by wholesale and retail trade stakeholders to bring about needed changes in the industry. Including “research to practice” or R2P goals is thus critical to making the link between research and workplace impact. While not every stakeholder group is involved with research, almost every wholesale and retail trade organization is involved somehow with converting knowledge into practice for use by employers, owners, and practitioners. Developing the National Wholesale and Retail Trade Agenda provides a vehicle for wholesale and retail trade industry stakeholders to describe what they believe are the most relevant issues, gaps, and safety and health needs in the industry.

The National Wholesale and Retail Trade Agenda is important because it will provide guidance for wholesale and retail trade industry stakeholders (e.g., industry, labor,

professionals, and academics) to prioritize their work among the many safety and health issues of interest. It is intended to inspire decision makers to include these topics in their top priorities. It is intended to steer researchers to cohesive topic areas for research proposals. Lastly, it is intended to encourage dialog and partnering among stakeholders on a subset of key issues – thus increasing our collective ability to make an impact in reducing injuries and illnesses among wholesale and retail trade workers. In sum, the agenda has been designed with a wide wholesale and retail trade target audience in mind. See Table 1 for examples.

## Defining the NORA Target Audience

Table 1 provides a list of potential participants or partners in addressing research needs and ensuring the transfer of the information to the public.

Table 1. Potential target audiences by type of audience

Audience type	Target audience
Research funding sources	<ul style="list-style-type: none"> <li>• Federal research agencies</li> <li>• Research foundations</li> <li>• State supported sources</li> <li>• Workers compensation insurance research organizations</li> <li>• Industry research organizations</li> <li>• Private sector loss control and insurance</li> </ul>
Public and private researchers	<ul style="list-style-type: none"> <li>• Government researchers</li> <li>• Academic researchers</li> <li>• Association and organization researchers</li> </ul>
Wholesale and retail trade organizations	<ul style="list-style-type: none"> <li>• Association of Convenience Stores</li> <li>• Food Marketing Institute</li> <li>• National Retail Federation</li> <li>• Retail, Wholesale and Department Store Union</li> <li>• Retail Industry Leaders Association</li> <li>• International Association of Department Stores</li> <li>• Regulatory agencies involved with Federal, State, and local levels</li> <li>• Nonprofit organizations and community, etc.</li> </ul>
Safety and health practitioners	<ul style="list-style-type: none"> <li>• Professional associations (e.g., ASSE, AIHA, NSC, ASCE)</li> <li>• Individual safety, industrial hygiene, and engineering practitioners</li> <li>• Consensus standards groups</li> <li>• Other professionals with safety and health interest (economists, physicians)</li> </ul>

The WRT Research Agenda is broad and reflects the diversity of the 146 sub-sectors that comprise the NAICS sectors, 42, 44-45. It is not intended, however, to be an inventory of all issues – so not every possible issue of interest is included on the agenda. The agenda should not be viewed as suggesting that other topics are unimportant. The WRT Sector Council, in

an attempt to focus the agenda, purposely restricted the number of critical topics or primary problems areas to six, as a manageable set of goals. If every topic is included as a priority then no topic truly is a priority.

## **Process for Developing Research Goals**

A variety of information sources have been used to develop these goals. NORA was launched with a series of town hall meetings around the country between December 2005 and December 2006. Additional written comments were submitted by stakeholders to a NORA sector docket. The resulting comments were organized by subject and are accessible at <http://www2a.cdc.gov/niosh-comments/nora-comments/commentsrch.asp>.

An initial NORA Sector Council was assembled from a cross section of groups and individuals representing various wholesale and retail trade perspectives. The group held a kickoff meeting in Washington, DC in December 2006 and held a follow-up meeting in July 2007, in connection with the NIOSH *Prevention through Design* conference, also in Washington, DC.

Council members were briefed on the NORA comments along with information on current available surveillance findings on wholesale and retail trade injuries and illnesses. Group members also contributed their opinions on three or four of the top problems in the wholesale and retail trade. The group considered a variety of criteria in looking at top problem candidates. For example:

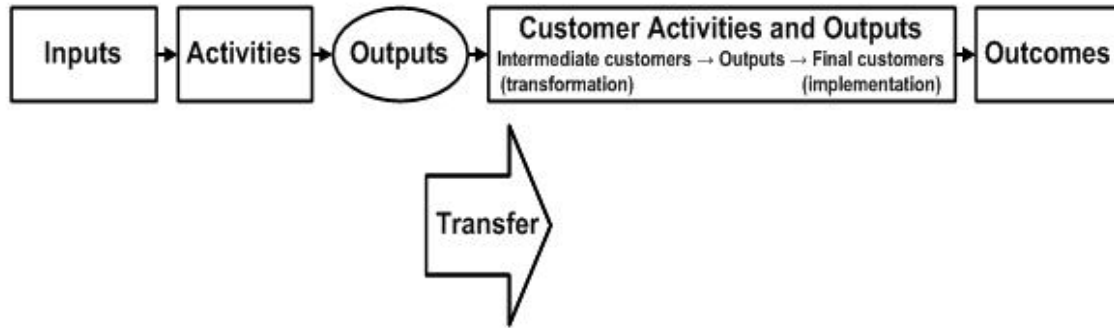
### ***Criteria for Defining Research Goals:***

1. What evidence supports this as a top problem?
2. Who is affected?
3. Why does the problem persist?
4. What would be the ideal situation?
5. What stage are we at in our knowledge and understanding of the wholesale and retail trade occupational injury and illness problem?
  - a. Do we understand the hazard?
  - b. Do we understand the solutions?
  - c. Do we understand the implementation of solutions?
6. Can the problem be described using common priority-setting criteria?
  - a. Severity, incidence, or prevalence
  - b. Size of exposed population
  - c. Need to improve current performance
  - d. Likelihood that research will make a difference
  - e. How much change is needed for near-term improvement?
7. From the industry's perspective, at what stage is the problem?
  - a. Is it important to the practitioners in this field and

- b. For the employers and employees in these businesses?

***NORA Logic Model for Developing Research Goals***

NIOSH developed a “logic model” to provide the WRT sector council with a diagram and shared understanding of the path by which the research process leads to a reduction in injuries and illnesses.



The process begins with inputs from stakeholders, namely the public and government, as well as production inputs, such as funding and infrastructure. Activities are based on the inputs and include internal or externally funded research and public health projects often performed in partnership with stakeholders to accomplish select objectives. Outputs from these activities included scientific reports, such as peer-reviewed journal articles, technical reports, meeting presentations, book chapters, and review articles. Other outputs include recommendations, guidance, market ready inventions, patents, measurement tools, and new training techniques.

The “transfer of outputs” is a critical step to disseminate findings. Transfer can target either intermediate customers (the term used to describe trade associations, labor organizations, government agencies, etc) or final end customers (wholesale /retail trade workers, employers, and owners). Researchers and research agencies generally have few direct links to workers and employers and must rely more heavily on effective transfer to intermediate groups such as business and labor associations.

***Goals: Definitions and Agenda Organization***

The logic model provides the framework for the sequence of goal related statements that constitute ***strategic planning***. Strategic planning is the process of determining the logical steps that need to occur to contribute to the program’s mission. The ***mission*** is a statement of the program’s purpose and what it does to achieve its purpose. The mission is supported by a series of concise ***strategic goals***, that serve as statements of a specific desired change needed to meet the overall mission statement. As an example, a strategic goal “to reduce injuries from falls in retail stores” is needed to meet the overall goal or mission of preventing injuries and fatalities of workers in the wholesale and retail trade sector. Each strategic goal is supported by one or more ***intermediate goals***, which are the desired activities that organizations or individuals undertake with the research or public health practice program output. Finally, ***activity/output goals*** are statements of desired program activities, including outputs and transfers to stakeholders. They include goals to create tools, controls, guidelines, training materials, recommendations, new knowledge, surveillance systems, documents,

policies, and conferences. Each strategic goal includes a *performance measure* designed to help gauge progress, which tracks the time and desired outcome.

### ***Progress to date and into the future***

Workgroups, co-chaired by NORA Wholesale and Retail Trade Sector Council members, began work to convert the top problems into strategic and intermediate goals. Workgroups included other interested individuals who participated as “corresponding” members to the NORA Wholesale and Retail Trade Sector Council. The resulting workgroup products, while varying somewhat in length and detail, all include the same basic goal and performance measure elements.

The National Wholesale and Retail Trade Agenda consists of six problem topics that were identified by the WRT Sector Council. The six topics are presented here as strategic goals. The first four strategic goals address outcomes (injuries): namely, (1) musculoskeletal disorders, (2) injuries/fatalities from falls, (3) injuries/fatalities from workplace violence, and (4) injuries/fatalities from motor-vehicle operations. The fifth and sixth strategic goals focus on topics that are nearly ubiquitous when discussing the wholesale and retail trade sector; namely, the topics of small businesses and worker diversity. Whereas the majority of WRT workers (>70%) are employed in small business, a smaller but growing segment of the WRT working population may be described as “diverse” from the standpoint of their demographic data and their work status, i.e., whether part-time (temporary) or fulltime/traditional. As an example, the WRT sector often employs both the youngest and oldest workers, frequently on a part-time basis. Such contingent workers may also have different cultural and ethnic backgrounds that can pose an added challenge from a safety and health perspective. As a result, employers, and safety and health practitioners where available, have an added task of devising effective training methods and tools to ensure that these special employees are able to work safely and productively. Finally, both the topics of small businesses and diversity of the workforce cut across (interact with) and affect progress on the outcome variables, and as such, the WRT sector council believed the two topics deserved special attention and each should be considered as a separate strategic goal for the WRT sector.

### **Sector Council & Corresponding Members**

The Council currently includes about 24 core members (8 from NIOSH and 16 from external stakeholder groups) who participate in twice yearly face-to-face meetings and help co-chair workgroups. The Council is led by two co-chairs, one selected by NIOSH, and one selected by the external core members. Most core members will rotate off the Council after two years of service and be replaced by other interested candidates. The NORA Wholesale and Retail Trade Sector Council corresponding members consist of interested stakeholders who may participate in particular workgroup conference calls and emails. The success of the Wholesale and Retail Trade Research agenda will depend on its implementation. Factors that will influence success include the (1) extent and will of the members in participating on a particular goal and/or desire to serve as a partner in the transfer activity; (2) availability of research funding; and (3) availability of researchers with needed expertise. A plan to be developed at a later date will describe some of these issues related to implementing the National Wholesale and Retail Trade Agenda goals. A listing of NORA Wholesale and Retail Trade Sector Council members is available at <http://www.cdc.gov/niosh/nora/councils/wrt/planpart.html> and a listing of corresponding members will be added shortly and updated on a regular basis.

***To become a “corresponding member”***

If you are interested in participating with the existing workgroups to continue to develop and implement these goals, please provide the following information and send to either the NORA Coordinator at [noracoordinator@cdc.gov](mailto:noracoordinator@cdc.gov) or the NIOSH Wholesale and Retail Trade Co-chair at [vanderson@cdc.gov](mailto:vanderson@cdc.gov)

- Your Organization
- Email address
- Phone number
- Mailing address
- Goal(s) interested in

**Providing Comments and Joining the Effort as a Potential Partner**

If you or your organization is interested in partnering on a particular strategic or intermediate goal, please contact the NIOSH Wholesale and Retail Trade Co-chair at [vanderson@cdc.gov](mailto:vanderson@cdc.gov). Partnering opportunities can cover a wide range of activities such as participating in research, helping to develop information products from research, or disseminating information. The National Wholesale and Retail Trade Agenda is a living document that will benefit from the free exchange of ideas, opinions, and data; we look forward to hearing from you.



## NATIONAL WHOLESALE AND RETAIL TRADE SECTOR

### Agenda: Occupational Safety and Health Research and Practice

**Background:** The rationale for developing the following national research agenda for the wholesale and retail trade (WRT) sector is based on the size and impact that this sector has on our economy and health care system and the associated need to ensure the prevention of workplace injuries and illnesses. The following provides a brief overview of the sector's main characteristics.

The WRT sector is a product of NIOSH's efforts to organize the 2002, two-digit North American Industrial Classification System (NAICS) coding into logical groupings that can be readily communicated and strategically governed and evaluated. As a result, NIOSH combined the wholesale component (sector 42) with the retail component (sectors 44-45). The combined WRT sector is the second largest of the eight NORA-defined sectors in terms of number of employees, about 21 million. The projected 10-year growth in number of employees is estimated at 5% for the retail component and 7% for the wholesale sector [BLS 2006-16, National Employment Matrix – Note that all references to BLS data are located in the special "BLS Reference" section at the end of the document]. The WRT sector consists of 146, six-digit NAICS codes, each representing a unique industry or type of business. These businesses range from a one-person, one-location workplace to a 1.7 million-employee chain store with 3,337 workplaces.

With the exception of the chain or franchised business, each work site is unique. They differ in size, type of merchandise, number and bulk of products, and physical nature of the workplace (i.e., warehouse, office, or store). However, the majority of jobs involve some aspects of materials handling (the storage, distribution, and sale of merchandise). Retail workers have the added demands and stresses of long workdays, prolonged standing, and frequent public contact. The temporary and seasonal nature of many jobs, especially in retail, adds to high turnover and employment of many young and older workers.

From the perception of the public, retail and wholesale jobs appear to pose little or no risk of injury or death. This perception may be valid from a risk perspective in some sub-sectors. However, the perception that few injuries, illnesses, or fatalities occur in the combined wholesale and retail sector is not supported by actual counts of these conditions.

In 2006, approximately 820,500 WRT workers were injured at work; 55% of these injuries were severe enough to require days away from work, job transfer, or restriction. Similarly, 580 fatalities occurred in 2006 in the WRT sector—more than in any other BLS sector. A large number of these injuries occurred in retail gas stations and convenience stores, jobs that employ young and often inexperienced workers. The BLS data also suggest that the majority of injuries and fatalities may be attributed to a sub-set of high-risk workplaces such as convenience stores, home lumber stores, and gasoline stations. In short, the cumulative burden of occupational injuries, illnesses, and deaths in WRT is among the largest of any sector, which serves to make this sector an important public health concern.

**Mission: Promote a healthy and safe workplace for all workers in the Wholesale and Retail Trade Sector by preventing occupationally-related illnesses and injuries through research and public health practices.**

*Whereas the overall or primary goal is to: Promote and Protect the Safety and Health of Workers in the Wholesale and Retail Trade Sector, this will be achieved to a large extent by reducing/eliminating the fatalities, injuries, and illnesses within the WRT sector as documented by the Bureau of Labor Statistics (BLS) and related sources.*

**Goals Preface**

The following agenda for the WRT Sector is based on six “**strategic**” goals. The success of each strategic goal is a function of the successful completion of one or more “**intermediate goals**,” which in turn is dependent on completing a set of select “**activities**” or achieving certain desired “**outputs**.” To the extent that each strategic goal can be met, there is an anticipated decrease in injuries, and fatalities, or an increase in a desired health objective. *Italicized content is designed to provide additional context for goals and activities.*

**Strategic Goal 1: Reduce chronic musculoskeletal disorders (MSDs) in wholesale and retail trade (WRT) workers.**

Overall Performance Measure: By 2014, there will be a 25% percent reduction in the Bureau of Labor Statistics (BLS) data that track MSDs in the WRT sector using 2006 as the baseline. This reduction will be a function of the extent to which the following three intermediate goals and 15 activity/output goals are achieved.

**Background:** *Musculoskeletal disorders (MSDs) continue to be the most recurrent class of injuries in the whole private sector workforce accounting for approximately 30% (~360,000) of the recorded nonfatal injuries in a given year (~1.2 million in 2006). Similarly, MSDs account for 30% of the nonfatal injuries recorded in the WRT sector. The vast majority of these injuries (77%) are soft tissue sprains and strains. Moreover, MSDs are responsible for more than 40% of the lost time. The majority of the MSD lost-time injuries are labeled as strains and sprains [BLS, 2006]. Nearly all workers in the WRT sector perform tasks generally described as “manual materials handling.” These tasks vary in frequency, load weight, distance traveled, size of container and amount of twisting. As each tasks’ factors increase in magnitude ( i.e., faster pace, heavier loads, larger containers), the risk of a low back injury increases NIOSH Lifting Equation [Waters-TR; Putz-Anderson-V; Garg-A; Fine-LJ, Ergonomics 1993 Jul;36(7):749-776. <http://www.cdc.gov/niosh/docs/94-110/pdfs/94-110-h.pdf> Appendix 1].*

**Intermediate Goal 1.1** By 2010, WRT stakeholders that include employers, practitioners, members of labor associations, and researchers will be joined in an *E-Data Injury Surveillance Network* (EDISN) where they will have access to and share WRT injury data on the incidence rates, lost time, and costs attributed to MSDs.

*The EDISN represents the web version of the WRT-Chart-book project. Adequate surveillance data are not only crucial for tracking problem areas, for identifying new problems, and for determining the impact of interventions, surveillance data will improve the overall awareness of the MSD problem by providing a common data source for comparing MSD rates across industries and sub-sectors. The WRT sub-sectors include*

*businesses where the rates are consistently higher than the averages, suggesting the need for a more detailed analysis of those jobs.*

*Participants in the workshops/focus groups mentioned in intermediate goal 1.2 should include representatives from the following high-risk sub-sectors where MSDs have been frequently reported: used car dealers, floor covering stores, building material and garden equipment supply stores, furniture and home furnishings stores, and office supply stores. The purpose of these meetings would be to consider those activities and output projects that ultimately would lead to best practices that would be evaluated and adopted by the WRT sub-sectors most at risk.*

*In the last 10 years there have been a significant number of research studies and subsequent literature reviews that have identified and summarized recommendations for engineering, administrative and personal protective approaches for preventing or reducing MSDs. A compilation of these best practices or simple solutions would be useful to employers and employees in the WRT sector facing hazards where manual material handling concerns are clear.*

**Activity/Output Goal 1.1.1** Review Bureau of Labor Statistics (BLS) surveillance systems, identify work-related MSD injuries among WRT sector industries and occupations, and use this information to build awareness of the nature and extent of the injuries within the WRT sector.

**Activity/Output Goal 1.1.2** Develop and maintain a database for annually updating a user-oriented Chart-book that will support the ongoing analysis of surveillance data for MSDs to track changing trends, under-reporting, and the severity of these injuries.

**Activity/Output Goal 1.1.3** Conduct analyses of the sub-sectors from the WRT Chart-book surveillance data to identify jobs/tasks in the WRT sector that have high rates of MSD injuries as well as high rates of lost time and use these data to build a quantitative risk assessment model where “work load” can be used as a predictor of MSD injury.

**Intermediate Goal 1.2** By 2010, NIOSH will convene a series of biennial workshops/focus groups composed of participants representing companies, unions, associations, practitioners, and academics to identify and adopt a set of 6-8 best work practices based on their review of “outputs” from research studies (activities).

**Activity/Output Goal 1.2.1** Conduct a set of laboratory studies to determine if there are injury mechanisms for specific MSDs that relate to aging, recovery, and excessive weight.

**Activity/Output Goal 1.2.2** Develop and evaluate economic models to accurately assess costs of work-related MSDs and potential savings related to reducing incidence and severity of work-related MSDs.

**Activity/Output Goal 1.2.3** Enlist the support of experienced practitioners who have worked in the sector to identify workplace solutions for manual materials handling problems that would be suitable for publication, e.g., as a NIOSH document.

**Activity/Output Goal 1.2.4** Conduct studies to assess the effectiveness of workplace interventions that are designed to reduce the physical stresses and risk of MSD injuries from manual materials handling.

**Activity/Output Goal 1.2.5** Fund extramural studies to evaluate the effectiveness of power assisted material handling devices that would serve to reduce the physical stresses on workers performing lifting tasks.

**Activity/Output Goal 1.2.6** Perform a business case analysis of one or more interventions for the WRT sector. Select an intervention that is being developed for reducing MSDs associated with manual materials handling activities.

*In today's economy, employers need to be competitive, and as such they require evidence that workplace interventions have benefits that can be quantified. There is a growing need for cost-benefits data to justify workplace interventions. As both the direct and indirect costs of injuries are estimated, the cost of prevention has been recognized as being more affordable.*

**Intermediate Goal 1.3** By 2012, NIOSH in partnership with business/trade associations, as stakeholders, will launch an awareness campaign aimed at those WRT sub-sectors where injuries rates and lost time from MSD injuries are significantly above the average rates as computed by the BLS.

**Activity/Output Goal 1.3.1** Identify effective communication channels for launching information awareness campaigns by conducting a series of focus groups of stakeholders from the WRT sub-sectors where incidence rates for MSDs have been above average, such as the following retail businesses: automobile dealers, automotive parts stores, and tire stores.

**Activity/Output Goal 1.3.2** Develop materials about MSDs for multiple media and audiences (e.g., employers and employees). Materials may include information relating to economic aspects of MSDs; relation between age, weight, and MSDs; risk assessment methods; and surveillance data.

*Although the literature defining what constitutes a successful "prevention campaign" in the occupational safety and health literature is sparse, one finding stands out. The most successful campaigns are based on "solutions" to common problems that employers and workers can recognize. Successful marketing companies, such as Procter and Gamble, understand that the concept of first "identifying a problem then showing a solution" is one of the most effective means of moving people to take action.*

**Activity/Output Goal 1.3.3** Disseminate information about the prevention of MSDs, e.g., through the use of NIOSH Documents, which includes methods for reducing or preventing MSD injuries from heavy lifting.

**Activity/Output Goal 1.3.4** Identify research translation opportunities for moving the findings of stakeholder research into documents or training media that can be used as guidance by WRT businesses in re-designing high risk lifting hazards.

**Activity/Output Goal 1.3.5** Develop tools, surveys, or methods to assess the effectiveness of the MSD outreach campaigns to determine what makes an effective communication campaign.

**Activity/Output Goal 1.3.6** Develop and test the effectiveness of targeted training materials for retail outlets that have high rates of MSD incidents.

**Strategic Goal 2: Reduce acute traumatic injuries in wholesale and retail trade workers by minimizing hazards that cause falls, slips, and trips as well as acute injuries from contact with hard objects.**

Overall Performance Measure: By 2014, there will be 20% reduction in the BLS data that track acute traumatic injuries in the WRT sector using 2005 as a baseline. This reduction will be a function of the extent to which the following three intermediate goals and 13 activity/output goals are achieved.

**Background:** *In 2005, there were a total of 52,040 nonfatal occupational injury cases in Wholesale/Retail Trade involving falls. Of the total cases, 73% (37,820) were in the retail industry. The two categories with the highest falls-related injuries in both wholesale and retail were falls to the floor, walkway, or other surfaces (30,080) and falls on the same level (35,500). Wholesale had 6,930 injuries with falls to the floor, walkway, or other surfaces and 8,580 injuries with falls on the same level. Retail had 23,150 related to falls to the floor, walkway, or other surfaces and 26,920 injuries related to falls on the same level [BLS, 2005a]. Using a fatal occupational injury cost model, Biddle et al. calculated the economic cost of falls-related fatalities from 1992 to 2002. There were a total of 502 fall-related fatalities (310 in retail and 192 in wholesale), with an estimated cost of \$287 million (2003 dollars) [NIOSH Pub. No. 2006-157 at <http://www.cdc.gov/niosh/docs/2006-157/>].*

**Intermediate Goal 2.1** By 2010, WRT stakeholders that include employers, practitioners, members of labor associations, and researchers will be joined in an *E-Data Injury Surveillance Network* (EDISN) where they will have access to and share WRT injury data on the incidence rates, lost time, and costs attributed to slips, trips, and falls.

**Activity/Output Goal 2.1.1** Review Bureau of Labor Statistics (BLS) surveillance systems and identify work-related injuries from falls among WRT sector industries and occupations.

*Recognizing that surveillance data from BLS can be very valuable in identifying important pockets of injuries at the two or even three- digit NAICS codes, those injuries often represent only the tip of the iceberg in terms of the real day-to-day events that may cause or contribute to some of the most common fall-related injuries.*

**Activity/Output Goal 2.1.2** Develop and maintain a database for annually updating a user-oriented Chart-book that will support the ongoing analysis of surveillance data for fall-related injuries. This would be designed to track changing trends, under-reporting, and the severity of these injuries.

*Injuries from falls are common and often costly for small businesses, yet the circumstances surrounding the falls, as to the causes, even the solutions, often go unreported or are lost.*

**Activity/Output Goal 2.1.3** Conduct sub-sector analyses on the WRT Chart-book surveillance data to identify jobs/tasks in the WRT sector that have high rates of fall-related injuries and lost time and use these data to build a quantitative risk assessment model where job and workplace attributes can be used to predict the risk of injury from falling or coming into contact with a hard surface.

*Falls cause 12.7 percent of all workplace fatalities, second only to motor vehicles at 35.6 percent; and falls cause 16.4 percent of all workplace disabling injuries, second only to*

*overexertion (manual materials handling) at 28.2 percent (Accident Facts, National Safety Council, 1988). Although the falls and the injuries resulting from tripping, slipping, and falling are commonplace in work environments where materials handling are a primary activity, it is less clear which establishments pose the greatest risk of falls for workers. More detailed information on causal factors is needed.*

**Intermediate Goal 2.2** By 2011, NIOSH will convene a series of biennial workshops/focus groups composed of participants from high-risk WRT sub-sectors representing companies, unions, associations, practitioners, and academics to identify and adopt a set of 6-8 best work practices based on their review of “outputs” from research studies (activities).

**Activity/Output Goal 2.2.1** Identify the risk factors for non-fatal falls sustained by WRT workers including interactions between commonly occurring risk factors, such as the size and shape of packages being carried.

*Over the last decade a significant amount of research has been performed to identify individual risk factors associated with falls. The most frequently mentioned risk factors include the following: floor surfaces, types of foot wear, ladders, visibility, housecleaning, forces applied to move loads, and carrying materials. Typically, a fall-related injury is the result of a combination of factors, often it is the unique interaction of those factors that result in an injury associated with a fall. More research is needed to understand the various contributing factors.*

**Activity/Output Goal 2.2.2** Conduct research on the relationship between clean work areas, lighting, uneven surfaces, shoe and floor surface friction, work pace, and work area layout and design and their influence on slips, trips, and falls.

**Activity/Output Goal 2.2.3** Develop a Fall Assessment Equation to compute the influence of risk factors leading to an injury-causing fall.

**Activity/Output Goal 2.2.4** Develop and apply economic models to accurately assess the costs of fall and contact-related injuries and fatalities and the potential savings by reducing the incidence and severity of fall and contact-related injuries and fatalities.

**Intermediate Goal 2.3** By 2012, NIOSH, business/trade associations, and labor and employer associations will develop and launch a series of public health campaigns on fall/contact injury prevention among the high risk WRT sub-sector business.

*Retailers are recognizing that implementing an “effective slip and fall prevention program” may be the best defense against getting caught with high workers’ compensation insurance, liability insurance, ADA or OSHA fines, or a lawsuit. An effective slip and fall prevention program will normally include the following five elements: (1) select/install known slip resistant flooring surfaces and treatments, (2) use proper cleaning methods, (3) measure and record the coefficient of friction of your store floors and walk ways, (4) identify proper slip resistant footwear and promote workers’ wearing it, and (5) use proper hazard warnings and signs.*

**Activity/Output Goal 2.3.1** Identify and summarize the existing research gaps in prevention programs that deal with falls, slips, and trips.

**Activity/Output Goal 2.3.2** Identify effective communication channels for launching information awareness campaigns where incidence rates for fall-related injuries have been above average.

*Effective occupational health campaigns require a minimum of the following five elements to successful launch a campaign aimed at changing both workplace factors as well as worker and employer behaviors: (1) meaningful charge or purpose that is recognized as desirable, (2) a defined target audience, (3) a message, i.e., the product, the content which is to be delivered, (4) plan for delivering the message or content, i.e., the media, who, where, and when, and (5) method for evaluating if the plan or campaign has worked.*

**Activity/Output Goal 2.3.3** Develop materials about preventing slips, trips, and falls for multiple media and audiences (e.g., employers and employees). Materials may include information relating to economic aspects of fall-related injuries, effects of age and weight, risk assessment methods, and surveillance data.

*There are many benefits from implementing a slip and fall prevention program that include lowered workers' compensation and liability insurance costs and an increased likelihood of compliance with ADA and OSHA by maintaining standards for slip resistant flooring surfaces. Increased employee productivity is also a likely byproduct of an effective slip and fall prevention program. The rationale is that employees where such programs are in place are able to walk at a more comfortable pace and feel safer from slipping or tripping.*

**Activity/Output Goal 2.3.4** Disseminate information about the prevention of fall-related injuries through the use of NIOSH and trade publications that includes methods for reducing or preventing falls associated with carrying or moving materials over uneven surfaces.

**Activity/Output Goal 2.3.5** Identify research translation opportunities for moving the findings of stakeholder research into documents or training media that can be used as guidance by WRT businesses in designing jobs to minimize slips, trips, and falls.

**Activity/Output Goal 2.3.6** Develop tools, surveys, or methods to assess the effectiveness of information campaigns on fall prevention to determine what makes an effective fall prevention campaign.

### **Strategic Goal 3: Reduce workplace violence in wholesale and retail trades through improved workplace design and improved training in the recognition and abatement of conditions that pose a risk of violence.**

*Background:* The workplace violence (WPV) fatality rate has been estimated at 1.6 per 100,000 for the retail trade sector, higher than many other sectors, including wholesale and retail trade, manufacturing, and mining. Violence at the workplace is a major public health issue. In 2005, retail had 2,020 cases of assaults and violent acts leading to injuries; wholesale had 400 cases. There were a total of 4,231 fatalities due to assaults and violent acts in retail between 1992 and 2002. Biddle et al. calculated the cost to be \$3,268 million (2003 dollars). There were 317 assaults and violent act-related fatalities at a cost of \$272 million [NIOSH Pub. No. 2006-157 <http://www.cdc.gov/niosh/docs/2006-157/pdfs/2006-157.pdf>]. The Survey of Workplace Violence Prevention indicated that small establishments



*generally do not offer WPV prevention training to their employees while large establishments do. When a WPV incident occurred in WRT, the responsibility to address prevention fell on the person responsible for the incident, managers/supervisors, and the owners or CEOs for small establishments [<http://www.bls.gov/iif/oshwc/osnr0026.pdf>].*

**Overall Performance Measure:** By 2014, there will be a 25% reduction in the BLS data that track workplace violence in the WRT sector using 2006 as a baseline. This reduction will be a function of the extent to which the following three intermediate goals and 16 activity/output goals are achieved.

**Intermediate Goal 3.1** By 2010, WRT stakeholders that include employers, practitioners, members of labor associations, and researchers will be joined in an *E-Data Injury Surveillance Network* (EDISN) where they will have access to and share WRT injury data on the incidence rates, lost time, and costs attributed to workplace violence.

*The EDISN represents the web version of the WRT Chart-book project. As tools for risk assessment of workplace violence and prediction are developed both small and larger employers may find value in participating in the EDISN. In addition to the ability to share surveillance data in a timely manner, the E-Network will seek to improve the systematic collection, analysis, and interpretation of the physical and behavioral factors that impact the risk of injury from workplace violence incidents.*

**Activity/Output Goal 3.1.1** Develop and adopt uniform definitions for the types of workplace violence incidents that occur in the WRT workplace.

*Improvements in the definition of workplace violence are needed to be able to compare surveillance data across workplace sectors. The National Institutes of Health (NIH) has proposed the definition in terms of what in the “opinion of a reasonable person, constitutes a threat of harm to a person or damage to property at a facility; or action that results in intentional infliction of physical harm to a person or actual damage to property at an facility, and includes intimidating or harassing behavior.”*

**Activity/Output Goal 3.1.2** Expand the range of surveillance data to include police response reports, emergency room admissions, and workers’ compensation claims to estimate the number and rate of workplace violence incidents.

**Activity/Output Goal 3.1.3** Develop and maintain a database for annually updating a user- oriented *Chart-book* that will support the ongoing analysis of surveillance data for workplace violence. The purpose is to track changing trends, under-reporting, and the severity of these injuries.

**Activity/Output Goal 3.1.4** Develop and maintain a database for annually updating a user-oriented *WRT Chart-book* that will identify emerging trends related to workplace violence incidents.

**Activity/Output Goal 3.1.5** Develop and maintain a database of workplace violence incidents for annually updating a user-oriented *WRT Chart-book* that will identify job tasks in both the retail and wholesale businesses that pose a risk for workplace violence.

**Intermediate Goal 3.2** By 2013, NIOSH will convene a series of biennial workshops/focus groups on the topic of workplace violence composed of participants representing WRT



companies, unions, associations, practitioners, insurers, and academics to identify/select a set of 6-8 work practices from the “outputs” of research studies (activities).

*Participants in these workshop/focus groups should include representatives from the following high-risk sub-sectors where workplace violence has been identified: convenience stores; gas stations; grocery stores; beer, wine, and liquor stores; and wine and distilled alcoholic beverage merchant wholesalers. The purpose of these meetings would be to consider those activities and output projects that ultimately would lead to “best practices” in the prevention of workplace violence that would be adopted by those WRT sub-sectors most at risk.*

**Activity/Output Goal 3.2.1** Review the workplace violence prevention programs and prepare a report on the barriers to implementing effective prevention. The goal is to develop information that is based on good research from studies of workplace violence that are first, credible; second, able to address cost factors; and third, can clarify the benefits of training and proper workplace design in a prevention program.

*NIOSH published a Current Intelligence Bulletin(CIB) 57 that provided recommended prevention strategies for reducing violence in the workplace. Prevention strategies for minimizing the risk of workplace violence include (but are not limited to) cash-handling policies, physical separation of workers from customers, good lighting, security devices, escort services, and employee training. A workplace violence prevention program should include a system for documenting incidents, procedures to be taken in the event of incidents, and open communication between employers and workers. Although no definitive prevention strategy is appropriate for all workplaces, all workers and employers should assess the risks for violence in their workplaces and take appropriate action to reduce those risks. The CIB57 on workplace violence can be accessed at <http://www.cdc.gov/niosh/violcont.html>.*

**Activity/Output Goal 3.2.2** Prepare a coordinated, efficient, and cost-effective national effort to understand, control, and prevent violent incidents at work.

**Activity/Output Goal 3.2.3** Use economic models to accurately assess the costs of fatal and non-fatal injuries and illnesses from workplace violence and the potential savings from reducing the incidence and severity of workplace violence events in select high-risk WRT sectors.

*Businesses forfeit an additional \$100 million a year in lost wages, sick leave, absenteeism, and non-productivity. (Domestic Violence for Health Care Providers, 3rd Edition, Colorado Violence Coalition, 1991)*

**Activity/Output Goal 3.2.4** Conduct research studies, publish the results on workplace violence risk factors, and develop guidelines that will enable retail business owners to identify the conditions that lead to workplace violence among WRT workers who are employed in high risk work places.

**Activity/Output Goal 3.2.5** Identify factors that increase the risk of workplace violence among employees in high risk wholesale and retail establishments.

*Factors that place workers at risk for violence in the workplace include interacting with the public, exchanging money, delivering services or goods, working late at night or during early morning hours, working alone, guarding valuables or property, and dealing with violent people or volatile situations.*

**Activity/Output Goal 3.2.6** Conduct an assessment of the effectiveness of those workplace programs, practices, and intervention methods designed to reduce the incidence and severity of violent incidents.

**Intermediate Goal 3.3** By 2013, employers and business trade associations in the WRT sector will publish the results of findings of effective workplace violence prevention programs to improve the transfer, diffusion, and adoption of interventions.

*One of the most widely cited violence prevention programs is based on OSHA's Safety and Health Program Management Guidelines (Federal Register, Vol. 54, Number 16, January 26, 1989, pp 3904-3916), which all employers can use as a foundation for their safety and health programs, including a workplace violence prevention program. Using this framework, OSHA has developed the following workplace violence prevention program guidelines specifically for the health care industry. Commitment and involvement are essential in any safety and health program. Management provides the organizational resources and motivating forces necessary to deal effectively with safety and security hazards. Employees can be involved, both individually and collectively, through participation in the worksite assessment, assisting in developing clear effective procedures, and identifying existing and potential hazards. Employee knowledge and experience should be incorporated into any written plan to abate and prevent safety and security hazards.*

**Activity/Output Goal 3.3.1** Develop and launch an informational campaign that will promote a community based “self certification” program in the prevention of workplace violence.

**Activity/Output Goal 3.3.2** Develop economic/business models to assess the costs of fatal and non-fatal injuries and illnesses from workplace violence and the potential savings from reducing the incidence and severity of workplace violence.

**Activity/Output Goal 3.3.3** Establish Internet access to those workplace violence prevention programs that were found to be effective based on assessments and empirical experience ratings.

**Activity/Output Goal 3.3.4** Publish case studies to show the value of using partnerships with employers, trade associations, government agencies, police departments and their associations, and crime prevention organizations to increase knowledge of WPV prevention.

**Activity/Output Goal 3.3.5** Disseminate management practices that reduce the risk of workplace violence in WRT sub sectors and publish the results in trade publications.

#### **Strategic Goal 4: Reduce motor vehicle-related injuries and fatalities among WRT workers in the highest risk sub-sectors.**

**Background:** *The WRT sector had 11,870 reported cases of nonfatal occupational injuries related to transportation incidents for 2005. Wholesale had 6,390 reported cases with a rate of 11.6 per 10,000 full-time workers. Retail had 5,480 cases with a rate of 4.6 per 10,000 full-time workers [BLS, 2005b]. Transportation and material moving occupations in wholesale had the highest number of nonfatal occupational injuries involving days away from work (43,870) when compared to other occupational groups in the same year [BLS, 2005c]. Transportation incidents are one of the leading contributors to fatalities in wholesale and retail. There were 209 reported fatalities in wholesale, of which, 106 were*

*transportation-related. In retail, there were 400 reported fatalities, 121 were transportation-related [BLS, 2005d]. Transportation incidents accounted for the majority of fatalities in the merchant wholesalers (durable and nondurable goods) sub-sectors with 102 cases. In Retail, transportation incidents accounted for numerous fatalities in such sub-sectors as: motor vehicle and parts dealers (33), building material and garden equipment and supplies dealers (23), and miscellaneous store and non-store retailers (26) [BLS, 2005d].*

**Overall Performance Measure:** By 2014, there will be a 30% reduction in the BLS data that track motor vehicle-related injuries and fatalities in the WRT sector using 2005 as the baseline. This reduction will be a function of the extent to which the following three intermediate goals and 15 output/activity goals are achieved.

**Intermediate Goal 4.1** By 2012, WRT stakeholders that include employers, practitioners, members of labor associations, and researchers will be joined in an *E-Data Injury Surveillance Network* (EDISN) where they will have access to and share WRT injury data on the incidence rates, lost time, and costs attributed to workplace motor-vehicle injuries/fatalities.

*The EDISN represents the web version of the WRT Chart-book project. As tools for risk assessment of motor vehicle related injuries are developed from the surveillance data to identify risk factors and drivers at increased risk, both small and larger employers also may find value in participating in the EDISN. In addition to the ability to share surveillance data in a timely manner, the e-network will seek to improve the systematic collection, analysis, and interpretation of the physical and behavioral factors that impact the risk of injury from workplace motor-vehicle incidents as well as increase an awareness of the problem among similar sub-sector businesses.*

**Activity/Output Goal 4.1.1** Develop standard definitions of motor vehicle injury and fatalities and track health status and injuries among truck/delivery drivers in WRT.

*According to The National Highway Traffic Safety Administration there is no coherent methodology for collecting and analyzing traffic accidents that are associated specifically with work. Each state regulates the basic rules of the road and requirements for commercial drivers, thus preventing the creation of a unified database and impeding efforts to make meaningful comparisons across several states.*

**Activity/Output Goal 4.1.2** Develop and maintain a database for annually updating a user-oriented *WRT Chart-book* that will support the ongoing analysis of surveillance data for motor vehicle-related injuries designed to track changing trends, under-reporting, and the severity of these injuries.

**Activity/Output Goal 4.1.3** Develop and maintain a database for annually updating a user-oriented *WRT Chart-book* that will identify job tasks that pose a high risk of motor-vehicle related injuries.

**Activity/Output Goal 4.1.4** Develop economic models to accurately assess the cost of motor-vehicle related injuries and fatalities for high risk WRT sub-sectors and the associated savings from the reductions of such injuries and fatalities.

**Intermediate Goal 4.2** By 2013, NIOSH will convene a series of biennial workshops/focus groups composed of participants representing WRT companies, associations, practitioners,

insurers, and academics to identify and adopt a set of 6-8 best work/operator practices based on their review of “outputs” from motor vehicle research studies (activities).

*Participants in these workshops/focus groups should include representatives from the following high-risk sub-sectors: fast food delivery services, pharmacies, florists, and grocery delivery. The purpose of these meetings would be to identify and adopt the best practices from those research activities and project outputs that have proven successful in the prevention of workplace motor-vehicle injuries/fatalities by those WRT sub-sectors most at risk. Similarly, the participants may consider how the findings and recommendations found in the American National Standards Institute (ANSI) standard Z15.1 [Safe Practices for Motor Vehicle Operations 2006] could be customized to meet the needs of workers in the WRT sector who operate motor vehicles as part of their job. Copies of the report are available from the ANSI publication site at the following location:  
[<http://www.standardsstore.com/RecordDetail.aspx?sku=ANSI%2FASSE+Z15.1-2006>].*

**Activity/Output Goal 4.2.1** Establish a working group consisting of representatives from large retail chain stores and small independent businesses to determine the factors associated with variability in occupational injury rates across individual business units.

**Activity/Output Goal 4.2.2** Identify occupational and non-occupational risk factors associated with occupational motor vehicle crashes.

**Activity/Output Goal 4.2.3** Identify and evaluate the leading risk factors for motor vehicle incidents among WRT workers.

**Activity/Output Goal 4.2.4** Identify and evaluate risk factors and resulting health outcomes arising from fatigue, circadian resynchronization, and sleep disturbance on motor vehicle injuries in the WRT sector.

**Activity/Output Goal 4.2.5** Identify factors that increase risk of motor vehicle injury and fatality among WRT workers who are employed in high risk WRT establishments.

**Activity/Output Goal 4.2.6** Identify risk factors to include the role of work organization, management commitment to safety, socioeconomic factors, and workplace cultures in addition to the characteristics of the worker, workplace, and environment on motor vehicle injuries in the WRT sector.

**Intermediate Goal 4.3** By 2014, the business, trade, labor, and professional organizations will provide support in the diffusion and adoption of intervention methods for motor vehicle-related injuries.

*Preventing work-related roadway crashes requires strategies that combine traffic safety principles and sound safety management practices. Although employers cannot control roadway conditions, they can promote safe driving behavior by providing safety information to workers and by setting and enforcing driver safety policies. Crashes are not an unavoidable part of doing business. Employers can take steps to protect their employees and their companies which include establishing policies, fleet management, and safety programs. Driver fatigue has been identified as a leading contributor to roadway crashes among workers as well as the general population. Fatigue affects driving performance by impairing information processing, attention, and reaction times; it may also cause a driver to fall asleep. Time of day, duration of wakefulness, inadequate sleep, sleep disorders, and prolonged work hours have all been identified as major causes of fatigue.*

**Activity/Output Goal 4.3.1** Identify effective communication channels for launching information awareness campaigns where incidence rates for motor-vehicle related-injuries have been above average.

**Activity/Output Goal 4.3.2** Develop and evaluate effective intervention strategies to reduce the number of transportation-related injuries for small business and high risk sub-sectors in the WRT sector.

**Activity/Output Goal 4.3.3** Train WRT drivers in safe driving practices and proper use of vehicle safety features and establish written procedures for proper maintenance of vehicles.

**Activity/Output Goal 4.3.4** Develop recommendations to reduce the number of fatalities and days-away-from-work incidents with professional organizations, such as the National Safety Council.

**Activity/Output Goal 4.3.5** Establish a national program headed by the federal transportation agencies to ensure all new delivery and transportation vehicles are equipped with appropriate occupant protection, such as seat belts, and where feasible and appropriate, with other safety features such as anti-lock brakes.

**Strategic Goal 5: Improve outreach to the small businesses within the wholesale and retail trade sector, which account for nearly 65% of the WRT workforce, by providing access to current occupational safety and health information.**

**Background:** *The label "small businesses" is assigned to a class of businesses operating as an independent economic unit in a single physical location with an upper limit based on the number of employees. The problem is that there is no consensus among economists as to the "cutoff size" separating small from large businesses. In 1994, an economist authored a paper on "Small business and their employees." In this frequently-referenced paper, the author chose to set the cut off "as fewer than 100 employees."*

*(<http://www.bls.gov/mlr/1994/10/art3full.pdf>).*

*Based on the small-business criterion (<100 employees), the author noted that small establishments make up about 98% (six million) of all establishments in the nation. "The remaining two percent of establishments (130,000), those with more than 100 workers employed more than 40 million workers" [based on 1992 BLS data]. The author also acknowledged that the vast majority of retail and wholesale establishments are small businesses. Another challenge noted in trying to develop a uniform classification for "small business" is the wide variety of establishments that comprise the small business. They may range from the one-owner "mom and pop grocery stores" to the multi-owner computer repair franchise. Small businesses that are part of franchise systems usually provide substantial training in basic business operations, which may, if at all, touch only briefly on matters of workplace safety and health.*

*More recently, the Small Business Administration (SBA) defined a small business as having fewer than 500 employees. This level was chosen for research purposes and subsequently may be more appropriate for this WRT Agenda. In trying to establish a means for tracking improvements in the injury and illness records of small businesses, it should be noted that the <500 criterion straddles the BLS breakdown of establishment size, set as between 250 and 999 employees, which makes it harder to use the BLS data to track reductions in injuries/*

*illnesses/fatalities for small businesses (<http://www.bls.gov/opub/mlr/2007/03/art3full.pdf>, p. 41). For the purpose of this WRT research agenda, we have chosen to identify small businesses as having fewer than 500 employees. In short, regardless of the nature of the criterion for small businesses, the prevention of occupational illness and injury is often difficult because small businesses typically have few safety and health resources, cannot usually hire staff devoted to safety and health activities, and often lack the ability to identify occupational hazards and conduct surveillance.*

**Overall Performance Measure:** Delivery of the following goals will improve WRT sector capabilities to reduce workplace hazards in small businesses to support a 15% reduction in injuries in establishments with fewer than 500 employees from all causes by 2013 using 2006 as the baseline.

**Intermediate Goal 5.1** Over the next two years our intention is to secure a commitment from a national trade association representing small businesses and a federal agency also representing small businesses. The goal would be to collectively launch a campaign to reduce fatalities and injuries in one or more targeted small business retail sectors.

*According to a 2002 study by the National Federation of Independent Businesses (NFIB), the vast majority of small business owners do not have the time or expertise to deal with workplace safety. As a result, workplace safety is typically not high on their list of concerns until they have an accident or receive an OSHA inspection, which is generally a rare event. Only about 25% of small business has been subjected to an OSHA inspection within the previous five years. Since OSHA inspection of small employers are infrequent, workplace safety in addition to its own merits also can lower insurance premiums, increase productivity and encourage morale.*

**Activity/Output Goal 5.1.1** By 2012, researchers and federal agencies (Bureau of Labor Statistics, workers' compensation systems, state health agencies, and hospital ERs) will establish a regional surveillance network designed to capture data on injuries, fatalities, and illnesses for select high risk small retail business.

**Activity/Output Goal 5.1.2** Establish partnerships with professional, business and labor associations trade groups and other appropriate entities to plan and implement intervention programs targeting small retail businesses.

**Activity/Output Goal 5.1.3** Conduct an analysis of existing NIOSH guidance documents, materials, media, and other publications in order to prioritize efforts to modify them or translate findings into products useful to small business owners in the WRT sector.

**Activity/Output Goal 5.1.4** Improve transfer, diffusion, and adoption of effective workplace violence interventions in high risk WRT sectors that include small businesses, such as convenience stores, liquor stores, and gas stations.

**Activity/Output Goal 5.1.5** Identify and recommend effective methods of risk communication and management to decision makers, employers and workers in small retail businesses.

**Activity/Output Goal 5.1.6** Forge new partnerships with small WRT employers and companies with substantial contingent employment to more effectively disseminate basic safety and health information.



**Activity/Output Goal 5.1.7** Identify and assess best practices for preventing workplace injuries among employees in small retail business from the use of equipment that can cause electrical shock, burns, and lacerations.

**Strategic Goal 6: Increase our understanding of how vulnerable/contingent worker groups experience disproportionate risks in wholesales and retail jobs and expand the availability and use of effective interventions to reduce injuries and illnesses among these groups.**

**Background:** *The Wholesale and retail trade (WRT) sector is unique in that this sector typically employs the most diverse workforce of any of the NAICS sectors. The WRT workforce will range in ages from the youngest of workers to the oldest of workers, as well as workers of varying ethnic background, education, disabilities, and language skills. As a result of this diversity, employers, particularly small employers, must be able to communicate to those workers the safety and health risk within their workplace, as well as be able to recognize the capacities and limitations of its unique workforce with the goal of ensuring the workers understand the risks and are trained in safe work practices.*

*Occupational hazards are known to be distributed differentially, and workers with specific biologic, social, and/or economic characteristics are more likely to have increased risks of work-related diseases and injuries. The relative proportions of these vulnerable populations (such as older workers, women, and minorities) within the U.S. workforce are increasing, and it is important to focus on these populations, particularly as they have been largely underserved in the past. The purpose of the sixth WRT strategic goal is to spotlight the fact that the work population of more than 21 million who work in retail and wholesale jobs is highly diverse which adds to the challenge of developing a national research agenda that will identify the health disparities that exist in the WRT sector and ultimately find ways to eliminate them.*

**Overall Performance Measure:** By 2016, there will be a 30% reduction in the number of injuries reported in those data systems that track injuries to WRT workers who have special needs as reflected in language, cognitive, and physical functioning (i.e., vulnerable) using 2006 as a baseline. This reduction will be a function of the extent to which the following eight activities/outputs are achieved.

**Intermediate Goal 6.1** Expand outreach to community-based organizations, national stakeholder organizations, employers, labor unions, and state and federal agencies to initiate a national awareness campaign by 2014 to ensure that those WRT workers who represent our most vulnerable work populations (~ 5-6 million) are protected from fatal and non-fatal injuries.

*A national campaign is needed that focuses on the health benefits of working as well as providing information on how workers age and its impact on physical and mental capacities. Americans are living longer than ever before and many are staying in the workforce past age 55; although older workers experience similar events leading to injury, they sustain more severe injuries than their younger counterparts and require more days away from work to recover. Not only do biological and physical functioning decline with age but cognitive functioning may also decline. Older workers face many of the same workplace hazards as do other workers; the most prevalent events leading to job-related injuries or fatalities are falls and assaults.*

**Activity/Output Goal 6.1.1** Ensure that employment, injury, illness and exposure assessment information is collected in sufficient detail for characterization of disparities in health status among the WRT workers.

**Activity/Output Goal 6.1.2** Expand occupational health surveillance capacity by enhancing existing databases to provide information on occupational health disparities and economic costs among the WRT working population.

**Activity/Output Goal 6.1.3** Increase the incorporation of qualitative research approaches in occupational health research that allow greater exploration of social and cultural factors in the workplace, such as racism, risk acceptance, and economic and job insecurity.

**Activity/Output Goal 6.1.4.** Promote the development of improved research through dissemination of research tools and approaches that better consider language, literacy, and cultural differences among working populations

**Activity/Output Goal 6.1.5** Promote the use of community-based participatory research methods, especially in intervention research. These methods permit greater input and participation by the community in developing and culturally tailoring interventions and may improve the intervention acceptance by workers.

**Activity/Output Goal 6.1.6** Forge new partnerships with small WRT employers and companies with substantial contingent employment to more effectively disseminate basic safety and health information.

**Activity/Output Goal 6.1.7** Promote outreach to clinics, health departments, and other healthcare providers that serve priority populations in the WRT sector such as immigrant, minority, older, and younger workers, and provide educational materials about relevant occupational safety and health issues and prevention approaches.

**Activity/Output Goal 6.1.8** Expand the research that is needed to understand the safety and health problems facing the contingent or part time workers, which includes more accurate information on the extent of the problem, understanding its causes and finding ways to prevent injury and illness and promote health among contingent workers.

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